

## IUBMB Enzyme Nomenclature

## EC 3.6.3.9

Accepted name: Na<sup>+</sup>/K<sup>+</sup>-exchanging ATPase

Reaction:  $\text{ATP} + \text{H}_2\text{O} + \text{Na}^+_{\text{in}} + \text{K}^+_{\text{out}} = \text{ADP} + \text{phosphate} + \text{Na}^+_{\text{out}} + \text{K}^+_{\text{in}}$

Systematic name: ATP phosphohydrolase (Na<sup>+</sup>/K<sup>+</sup>-exchanging)

Other name: sodium pump; Na<sup>+</sup>,K<sup>+</sup> pump; Na,K-pump; (Na<sup>+</sup> + K<sup>+</sup>)-activated ATPase; (Na<sup>+</sup> + K<sup>+</sup>)-ATPase; Na<sup>+</sup>,K<sup>+</sup>-ATPase; Na,K-activated ATPase

Comments: A P-type ATPase that undergoes covalent phosphorylation during the transport cycle. This is a plasma membrane enzyme, ubiquitous in animal cells, that catalyses the efflux of three Na<sup>+</sup> and influx of two K<sup>+</sup> per ATP hydrolysed. It is involved in generating the plasma membrane electrical potential.

Links to other databases: BRENDA, EXPASY, KEGG, ERGO, PDB, CAS registry number:

References:

1. Skou, J.C. The influence of some cations on an adenosinetriphosphatase from peripheral nerve. *Biochim. Biophys. Acta* 23 (1957) 394-401.
2. Post, R.L., Sen, A.K. and Rosenthal, A.S. A phosphorylated intermediate in adenosine triphosphate-dependent sodium and potassium transport across kidney membrane. *J. Biol. Chem.* 240 (1965) 1437-1445.
3. Skou, J.C. The energy-coupled exchange of Na<sup>+</sup> for K<sup>+</sup> across the cell membrane. The Na<sup>+</sup>,K<sup>+</sup> pump. *FEBS Lett.* 268 (1990) 314-324. [PMID: 2166689]

[EC 3.6.3.9 created 1984 as EC 3.6.1.37, transferred 2000 to EC 3.6.3.9, modified 2001]

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Return to [EC 3.6.3 home page](#)

Return to [EC 3.6 home page](#)

Return to [EC 3 home page](#)

Return to [Enzymes home page](#)

Return to [IUBMB Biochemical Nomenclature home page](#)